Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - MAR/APR 2017

Time: Three Hours **Max. Marks: 80 Marks**

Basic Biochemistry, Ocular Biochemistry and Nutrition

Section A: Basic Biochemistry (40 Marks)

(Revised Scheme – 3)

Q.P. CODE: 3101

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

(Note: Both QP Codes 3101 and 3102 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Explain the various reactions in Kreb's cycle.
2. Describe the process of protein synthesis.
3. Explain about clinical important enzymes.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. What are the structural characteristics of Glycosaminoglycans?
5. Essential and non-essential amino acids
6. Explain briefly the role of various antioxidants in biological systems.

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Polyunsaturated fatty acids
8. What is Transamination? Give an example.
9. Benedict's test
10. Selenium
11. What is Xerophthalmia?

I Year B.Sc. Optometry Degree Examination - SEP-2017

Time: Three Hours **Max. Marks: 80 Marks**

Basic Biochemistry Ocular Biochemistry and Nutrition

Q.P. CODE: 3102

Section B – Ocular Biochemistry and Nutrition (40 Marks)

Revised Scheme - 3

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

(Note : Both QP Codes 3101 and 3102 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. With the help of food guide pyramid explain energy usage in human body.
2. Biochemical composition and glucose metabolism of lens
3. Explain briefly about visual cycle of the eye

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Write a note on Functions and source of carbohydrate.
5. Write a note on low birth weight
6. Factor effecting corneal hydration

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Composition of sclera
8. Differentiate aerobic and anaerobic cycle
9. What is the treatment plan for iodine deficiency
10. What is a healthy diet? Write a few advantage of it.
11. What is nutritional status? What is the external factor which is depends upon?

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I Year B.Sc. Optometry Degree Examination - SEP 2017

Time: Three Hours **Max. Marks: 80 Marks**

General Anatomy and Physiology, Ocular Anatomy and Physiology

Q.P. CODE: 3103

Section A – General Anatomy and Physiology (40 Marks)

Revised Scheme - 3

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

(Note : Both QP Codes 3103 and 3104 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe the morphology and development of red blood cells
2. Describe the mechanism of clotting of blood. List the important clotting factors
3. With a neat diagram describe the digestive system of the body

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Functions of bone-marrow
5. Outline the functions of mitochondria, centrioles, golgi complex and ribosomes
6. Diagrammatic description of the structure of a long bone

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Clonus
8. Saltatory movement
9. Fibrinogen
10. Lymphoid tissue
11. Cartilage

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I Year B.Sc. Optometry Degree Examination - SEP 2017

Time: Three Hours **Max. Marks: 80 Marks**

General Anatomy and Physiology, Ocular Anatomy and Physiology

Section B: Ocular Anatomy and Physiology (40 Marks)

(Revised Scheme – 3)

Q.P. CODE: 3104

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

(Note: Both QP Codes 3103 and 3104 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Write in detail about anatomy of crystalline lens and describe the mechanism of accommodation.
2. Explain the anatomy of cornea and brief on the factors affecting its transparency.
3. Explain visual pathway with diagram. Mention the layers of retina.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Outline the boundaries of the anterior chamber and explain aqueous humour outflow.
5. With diagram, explain the yoke muscles helping the eye in cardinal gazes.
6. Write on photoreceptor layer of retina.

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Name the intra ocular muscles.
8. Blinking and Peering
9. Limbus
10. Blind spot
11. Cloquet’s canal

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - SEP-2017

Time: Three Hours **Max. Marks: 80 Marks**

Physical and Principles of Lighting, Geometric Optics
Section A: Physical and Principles of Lighting (40 Marks)
(Revised Scheme – 3)
Q.P. CODE: 3105

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

(Note: Both QP Codes 3105 and 3106 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define Simple harmonic motion. Obtain the expressions for Velocity, Kinetic energy, Potential energy and the total energy of a body executing Simple harmonic motion.
2. With a neat diagram, explain the construction and action of a Lummer-Brodun photometer.
3. Give Fresnel's explanation of rectilinear propagation of light.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. What are the different kinds of spectra?
5. Give the theory of Raman effect.
6. A point source of 500 C.P is hung at a height 4m above a point P on a horizontal road. Fine the illumination at P and at Q 3m from P on the road.

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Indicate by a diagram the optic axis of a calcite crystal.
8. State the laws of photo electric emission.
9. The refractive index of a material is 1.634. Calculate the critical angle.
10. What is Lissajeous figures?
11. What is optical activity? On what factors does it depend?

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I Year B.Sc. Optometry Degree Examination - SEP-2017

Time: Three Hours **Max. Marks: 80 Marks**

Physical and Principles of Lighting Geometric Optics
Q.P. CODE: 3106

Section B – Geometric Optics (40 Marks)
Revised Scheme - 3

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

(Note : Both QP Codes 3105 and 3106 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Derive the lens maker's formula for a thick lens.
2. What are the major defects of the image formed by a convex lens? How is chromatic aberration minimized?
3. State the laws of photo electric emission. Deduce Einstein's photo electric equation

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Deduce an expression for equivalent focal length of two lenses kept separated along a common axis.
5. Derive the mirror equation.
6. In an optical fiber, the core and cladding materials have refractive indices 1.6 and 1.4 What is the value of the critical angle? Also calculate the acceptance angle

SHORT ANSWERS **5 x 2 = 10 Marks**

7. The critical angle of glass is 42^0, calculate the polarizing angle.
8. What is normal shift? Write the expression for the same.
9. Define Candela.
10. What are entrance pupil and exit pupil of a lens?
11. What is the principle of an optical fiber? Mention its applications

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